

WHAT IS CLAIMED IS:

1. A bearing assembly comprising:

a guide having a top side provided with a guide surface comprising a magnetic body;

5 a bearing provided on a portion of a moving body that opposes the guide surface for the purpose of levitating the moving body above the guide surface, said moving body moving along the guide surface; and

a magnet, which has an opposing surface that
10 opposes the guide surface, provided on the moving body for the purpose of applying a magnetic attractive force between the moving body and the guide surface;

wherein a relationship between the guide surface and the size and/or placement of the opposing surface
15 of said magnet is defined for the purpose of limiting displacement of the moving body in a width direction, which is orthogonal to the travelling direction of the moving body, to an allowable range, using a magnetic attractive force in the width direction produced in
20 accordance with amount of deviation of the opposing surface of said magnet from the guide surface owing to displacement, which can occur when the moving body moves along the guide surface, parallel to the guide surface and in the width direction.

25 2. The assembly according to claim 1, wherein size of the guide surface in the width direction is defined by a groove, which extends along the travelling direction,

provided in the top side of said guide, and a terminus, which extends along the travelling direction, of the top side of said guide.

3. The assembly according to claim 1, wherein the top
5 side of said guide is provided with a protrusion, which extends along the travelling direction, so as to oppose said magnet, and said guide surface is formed by the top side of said protrusion opposing said magnet.

10 4. The assembly according to claim 2, wherein the size of the guide surface in the width direction is the same as or smaller than the size of the opposing surface of said magnet in the width direction.

5. The assembly according to claim 3, wherein the
15 size of the guide surface in the width direction is the same as or smaller than the size of the opposing surface of said magnet in the width direction.

6. The assembly according to claim 1, wherein said
20 magnet is provided on the moving body at a plurality of locations spaced apart along the travelling direction of said moving body.

7. The assembly according to claim 1, wherein the
guide surface extends along the travelling direction on both sides of said guide, the moving body has an
25 opposing surface that opposes each of the guide surfaces, and each of the opposing surfaces is provided with said magnet;

an outer end portion of the opposing surface of each magnet and an outer end portion of the guide surface being in agreement, or the outer end portion of the opposing surface of each magnet projecting
5 beyond the outer end portion of the guide surface by a prescribed amount.

8. The assembly according to claim 2, wherein the size of the guide surface in the width direction is the same as or greater than the size of the opposing
10 surface of said magnet in the width direction.

9. The assembly according to claim 3, wherein the size of the guide surface in the width direction is the same as or greater than the size of the opposing surface of said magnet in the width direction.

15 10. The assembly according to claim 1, wherein an end portion of the guide surface along the travelling direction is defined by an end portion of the guide surface.

11. The assembly according to claim 2, wherein an end
20 portion of the guide surface along the travelling direction is defined by a groove that extends in a direction orthogonal to the travelling direction.

12. The assembly according to claim 3, wherein an end portion of the guide surface along the travelling
25 direction is defined by an end portion, which extends along the travelling direction, of the top side of said protrusion.

13. The assembly according to claim 1, wherein the guide surface extends along the travelling direction on both sides of said guide, the moving body has an opposing surface on both ends thereof that opposes
5 each of the guide surfaces, and each of the opposing surfaces is provided with said magnet;

one end portion of the moving body being provided with a hydrostatic bearing opposing a side face of said guide orthogonal to said guide surface.

10 14. A table device having the bearing assembly set forth in claim 1.

15. An exposure apparatus comprising:

exposure means for projecting part of a pattern on a master plate onto a substrate via an exposure
15 optical system, and exposing the substrate to a prescribed exposure area of the pattern on the master plate; and

a table device having the bearing assembly, which is set forth in claim 1, for moving the master plate
20 and/or substrate for exposure.

16. A semiconductor manufacturing method that uses the exposure apparatus set forth in claim 15.